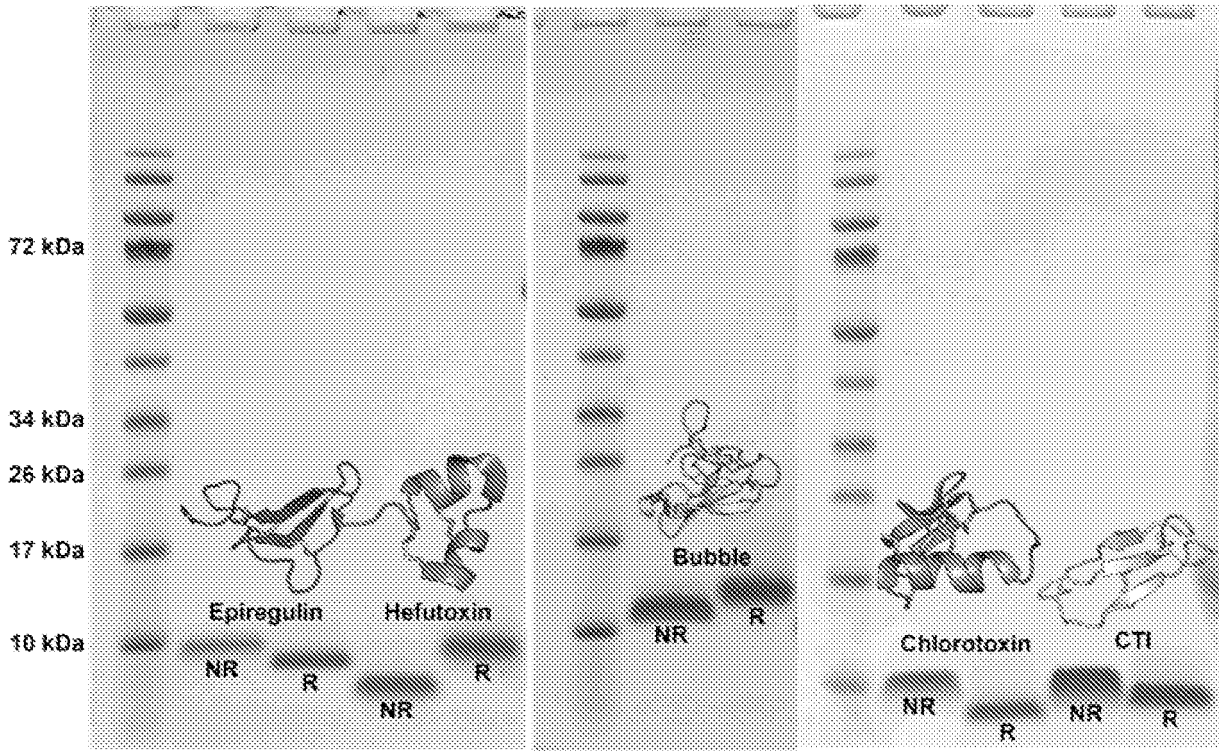

72 kDa
34 kDa
26 kDa
17 kDa
10 kDa
Epiregulin
Hefutoxin
NR
R
NR
R
Bubble
NR
R
Chlorotoxin
CTI
NR
R
NR
R

FIG. 1

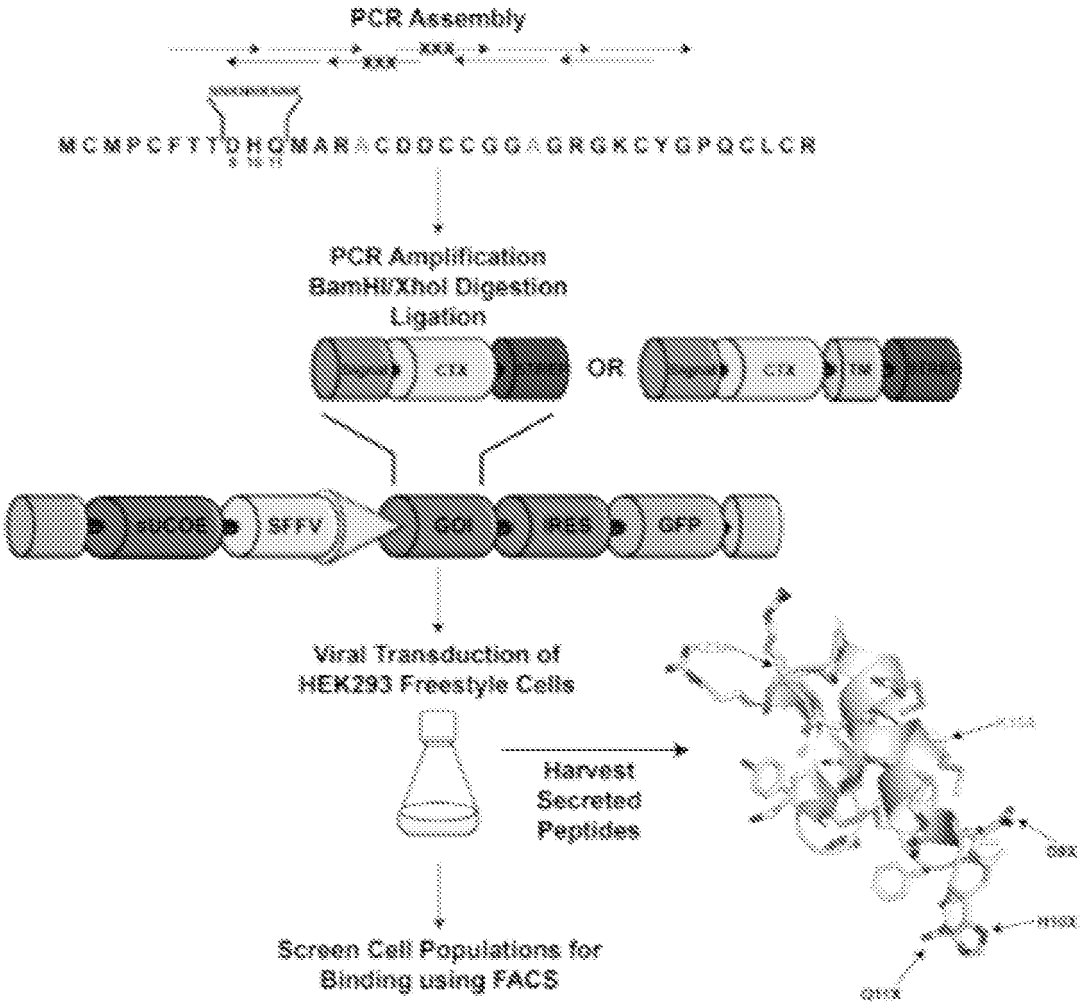

PCR Assembly
PCR Amplification
BamHI/XhoI Digestion
Ligation
OR
SFFV
GFP
Viral Transduction of
HEK293 Freestyle Cells
Harvest
Secreted
Peptides
Screen Cell Populations for
Binding using FACS

FIG. 2

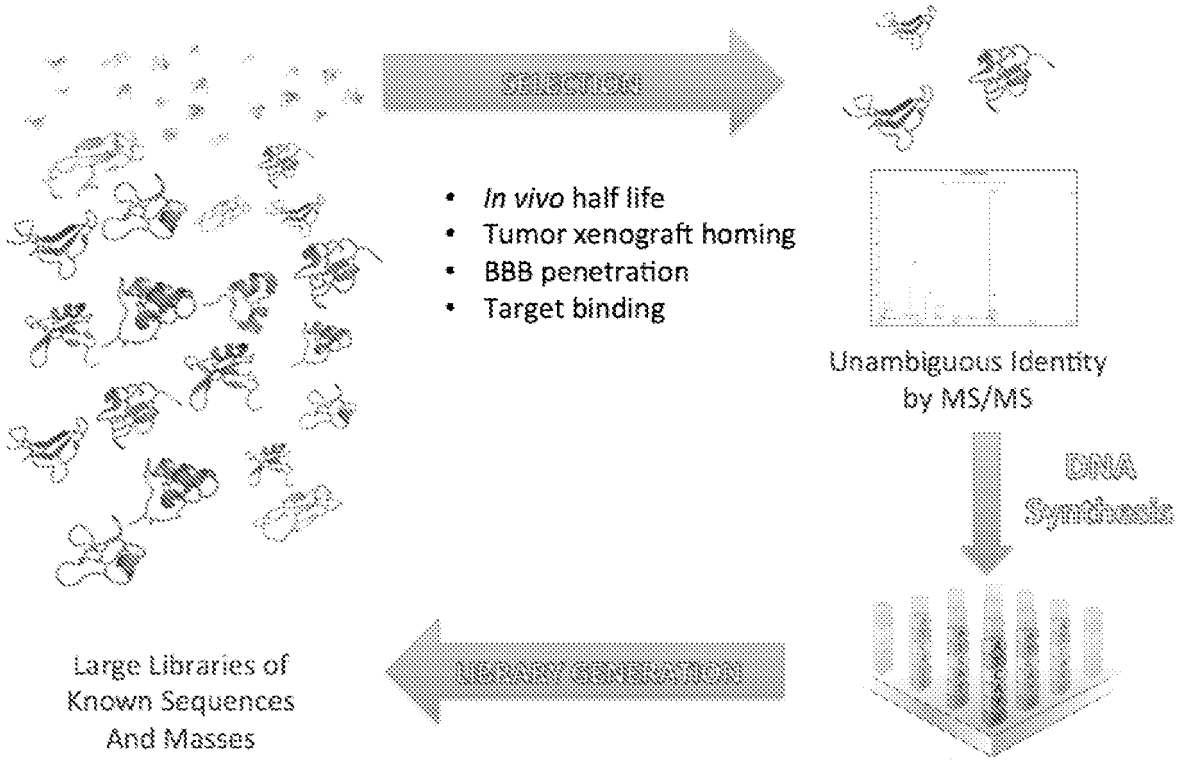

SELECTION
• In vivo half life
• Tumor xenograft homing
• BBB penetration
• Target binding
Unambiguous Identity
by MS/MS
DNA
Synthesis
Large Libraries of
Known Sequences
And Masses

FIG. 3

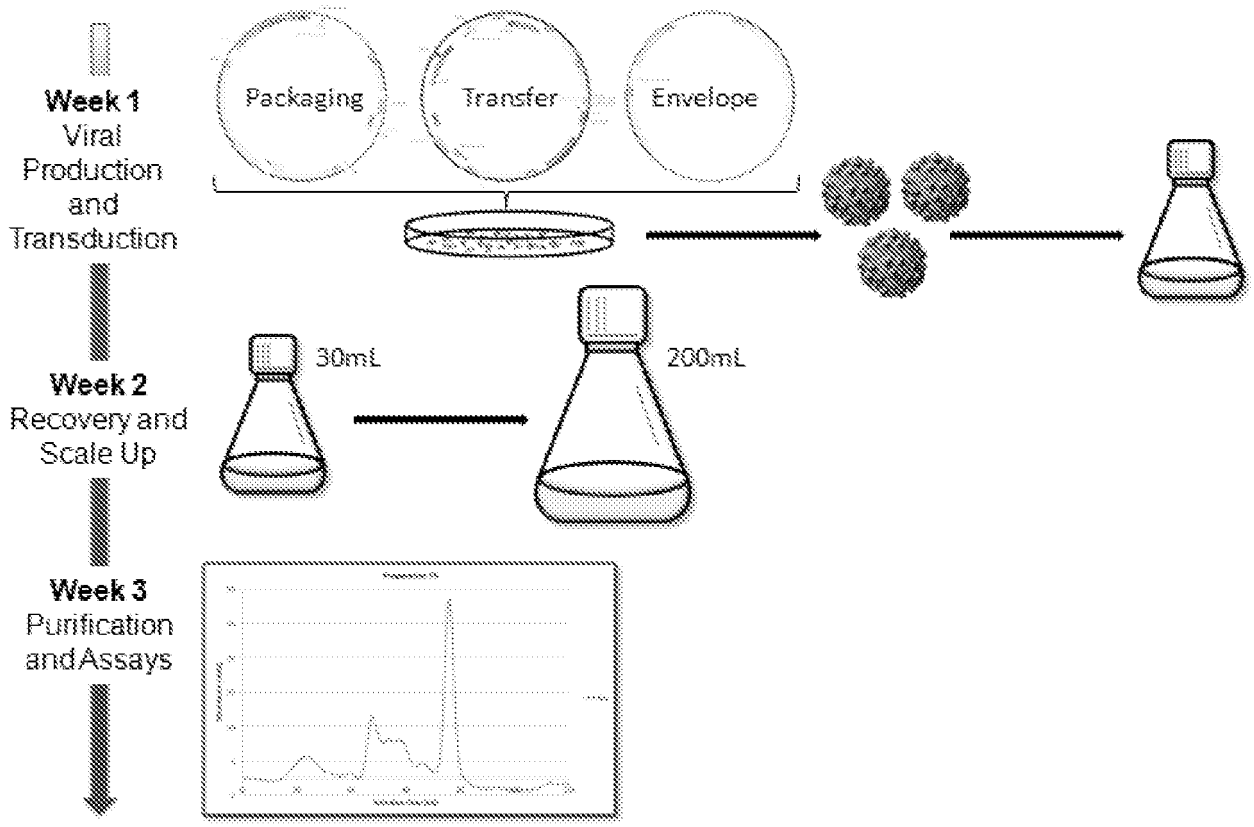

Week 1
Viral
Production
and
Transduction
Packaging
Transfer
Envelope
Week 2
Recovery and
Scale Up
30mL
200mL
Week 3
Purification
andAssays

FIG. 4

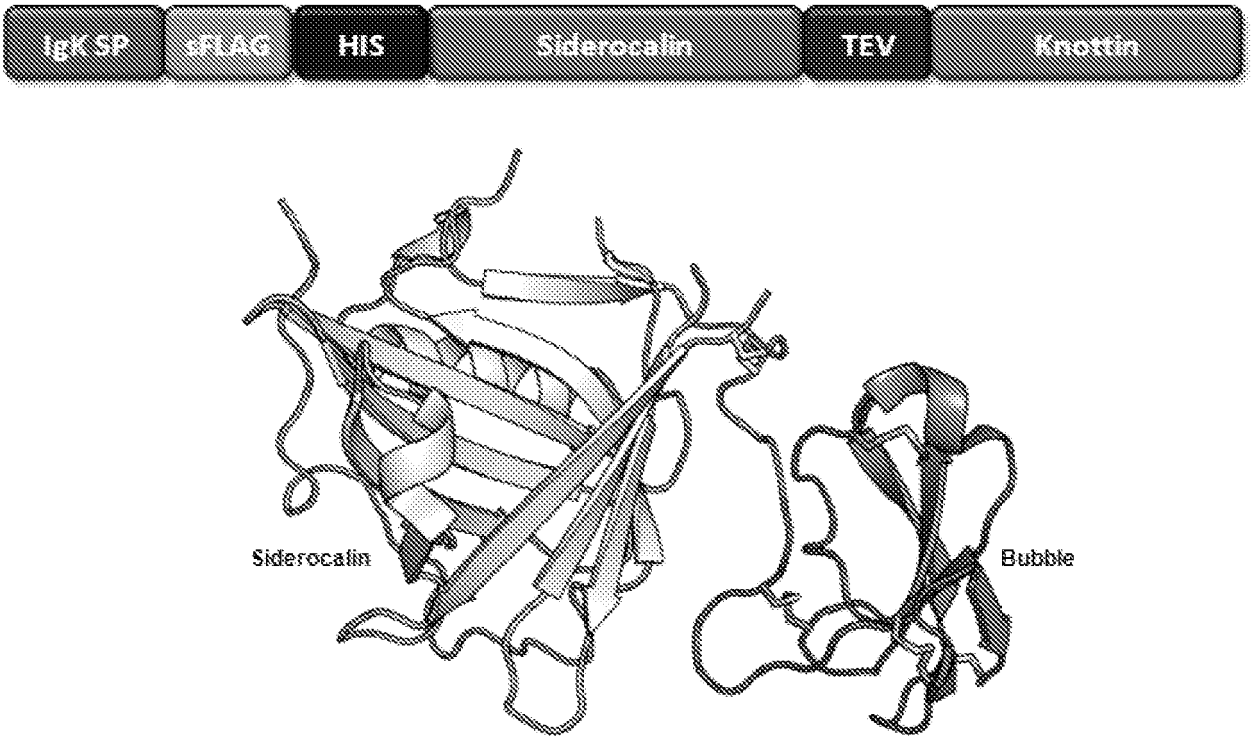

IgK SP
cFLAG
HIS
Siderocalin
TEV
Knottin
Siderocalin
Bubble

FIG. 5

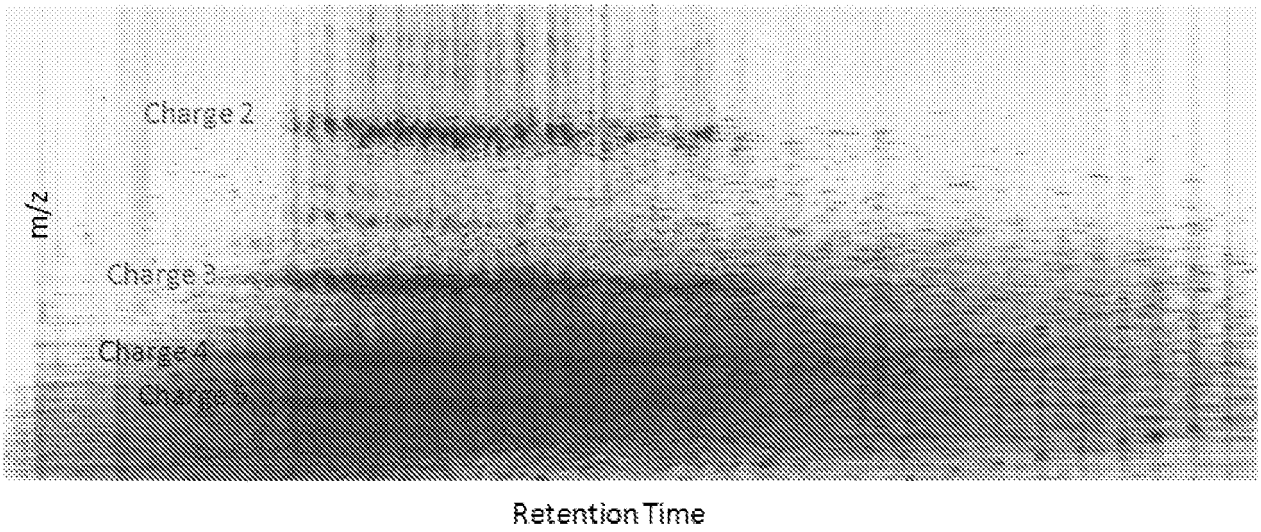



FIG. 6

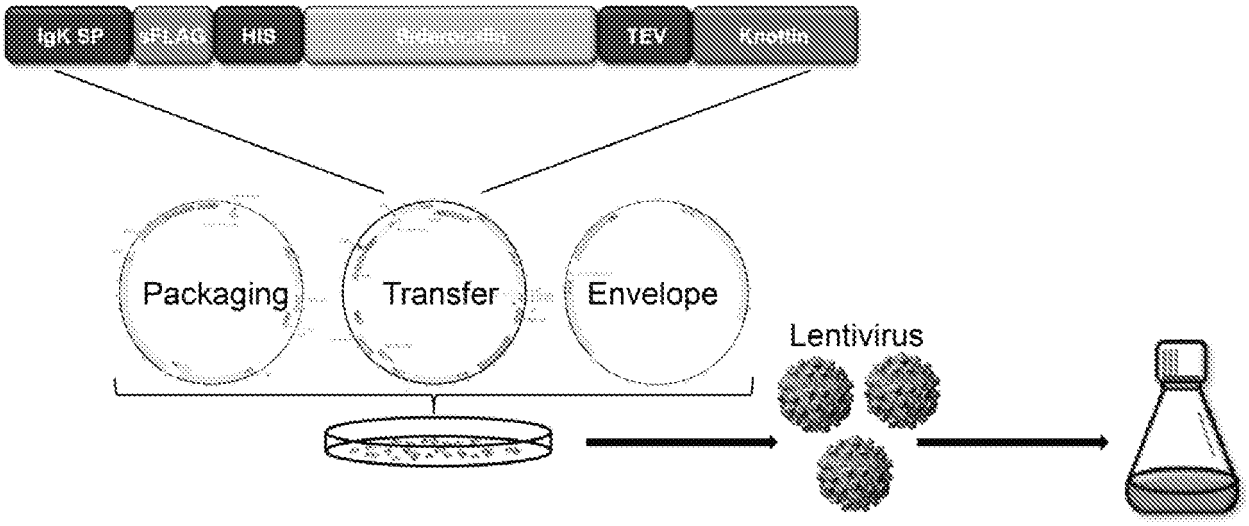

IgK SP
vRLAG
HIS
TEV
Kringle
Packaging
Transfer
Envelope
Lentivirus

FIG. 7

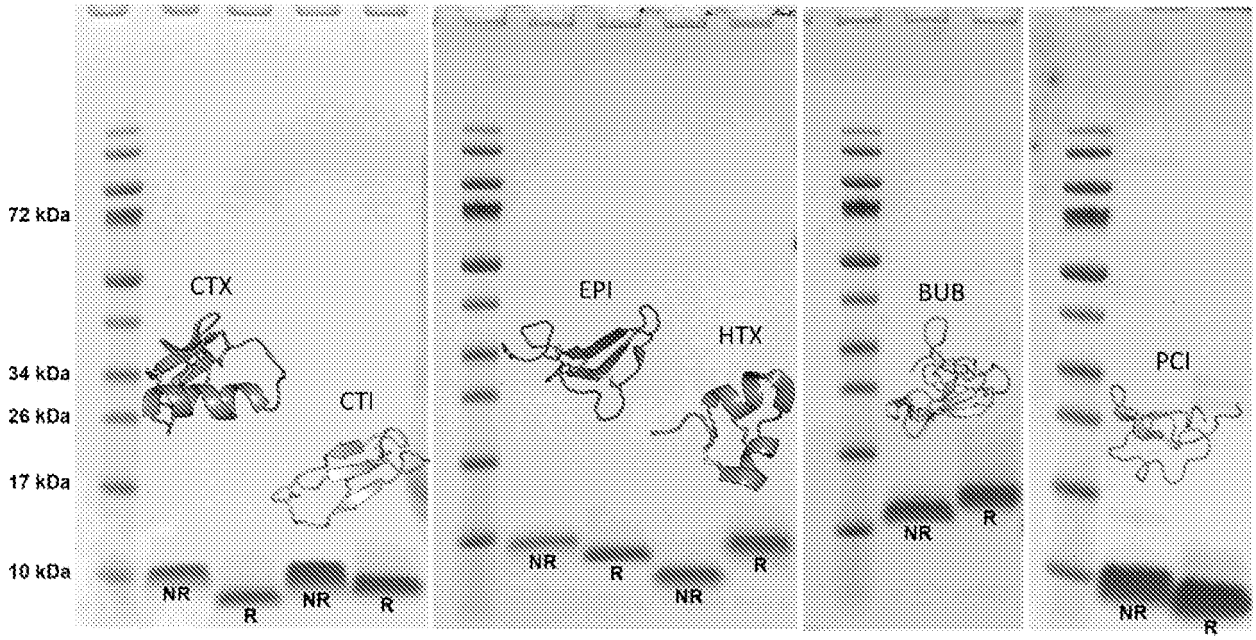

72 kDa
34 kDa
26 kDa
17 kDa
10 kDa
CTX
CTI
EPI
HTX
BUB
PCI
NR
R
NR
R
NR
R
NR
R
NR
R

FIG. 8

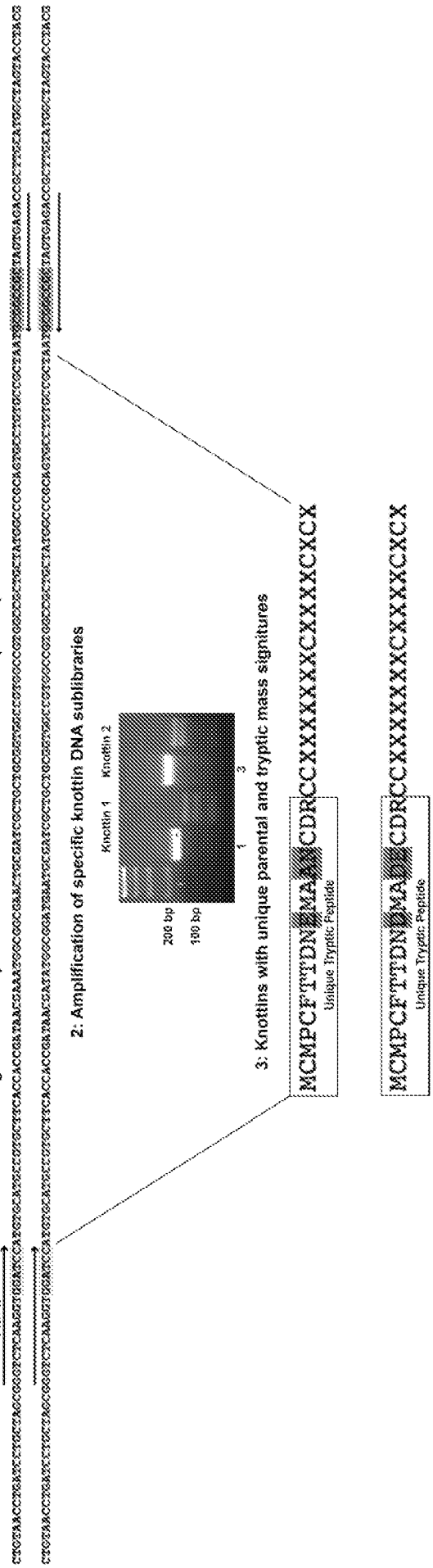

1: Oligonucleotide pools code for knottin variants with unique sequencas
Primer
2: Amplification of specific knottin DNA sublibraries
Knottin 1
Knottin 2
200 bp
100 bp
1
2
3
3: Knottins with unique parental and tryptic mass signatures
MCMPCFTTDN MAAA CDRCCXXXXXXXCXXXXCXCX
Unique Tryptic Peptide
MCMPCFTTDN MAAA CDRCCXXXXXXXCXXXXCXCX
Unique Tryptic Peptide

FIG. 9A

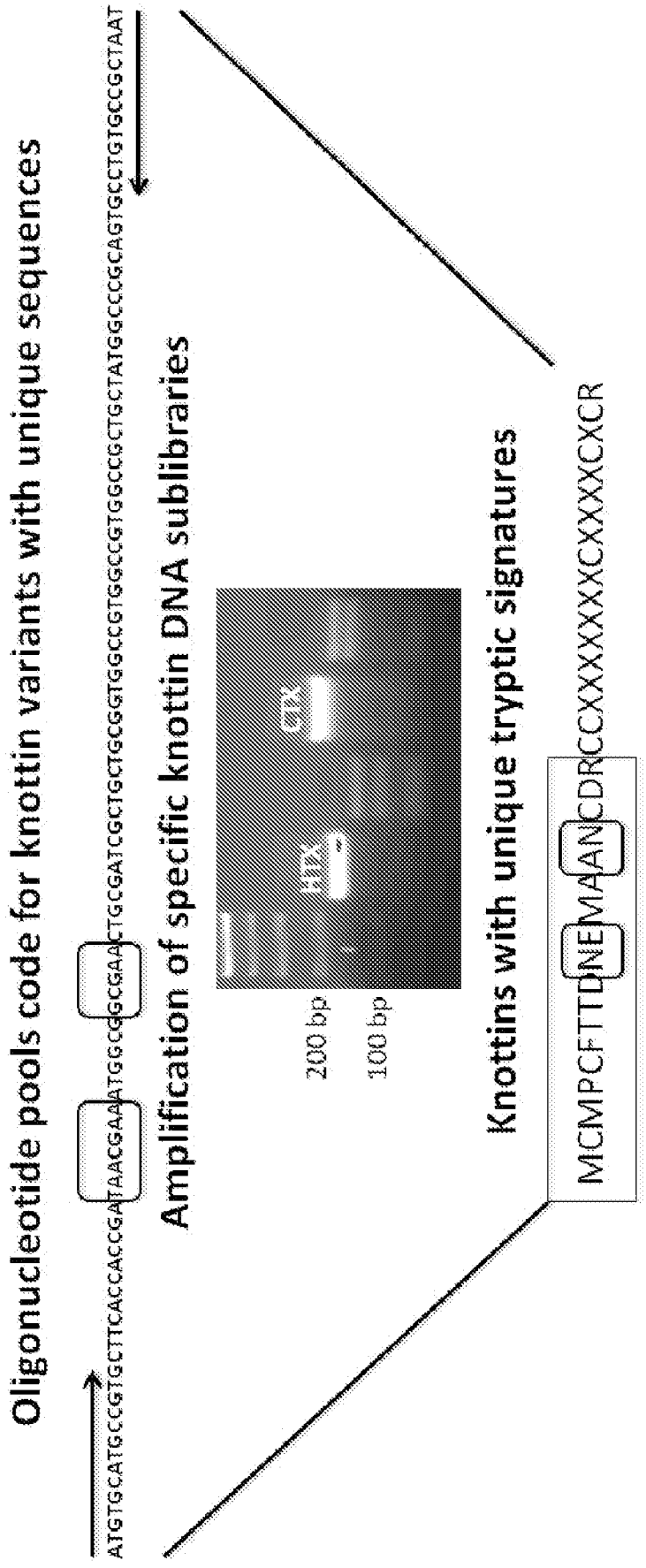

Oligonucleotide pools code for knottin variants with unique sequences
ATGTGCATGCCGTGCTTCACCACCGATAACGAAATGGCGGCGAATGCGATCGCTGCTGCGGTGGCCGTGGCCGTGGCTGCTATGGCCCGCAGTGCCTGTGCCGCTAAT
Amplification of specific knottin DNA sublibraries
200 bp
100 bp
Knottins with unique tryptic signatures
MCMPCFTTDNEMAANCDRCCXXXXXXXXCXXXXCXCR

FIG. 9B

GSEISCEPGRTFRDRCNQCFCGFDGRRAACTIRACPNQ
GSEIHCQPGRTFRDRCNTCYCGWYGRSAACTLRACPNQ
GSEISCEPGGTFEDRCNVCRCGADGRSAGCTLRACPNQ
GSRIDCRPGRTFRDRCNTCMCGWTGHSAACTLRACPNQ
GSEISCEPGRTFRDRCNTCHCWADGRGAACTERACPNQ
GSESSCEPGATWRDRCNTCRCRADGRSAACTVRQCPNQ
GSEIFCIPGRTFRDRCNTCRCGRRGISAACTLRACPNQ
GSEISCEPGRTFRDRCNTCRCGADGRSAACTLFDCSLQ
GSEISCEPGRTSRDRCNTCRCGADGRSAACTLIDCPGQ
GSEISCEPGRTFRDRCNTCRCGADGRDAACTLGHCFFY
GSEISCEPGFTEQDRCNTCRCGAIGRSAACTLRACPNQ
GSEISCEPYSTFRDRCNTCSCGADGRGAACTMRACPNQ
GSEISCEPGRTFRDRCNTCRCGADGRSAACTLVACLIT
GSEIFCIPGVTFRFRCNTCRCGMDGRSAACTLRACPNQ
GSENDCHPGTTFRDRCNTCRCGGEGRSAACTLRACPNQ
GSQRSCEPGRTFRDRCNTCRCGADGRSAACTLFICPFQ
GSEISCEPGRTFRDRCNTCRCGADGRSAACTLFLCGFI
GSEISCEPDSTTRDRCNSCRCGNDGRSAACTLRACPNQ
GSEISCEPGRTFRDRCNTCRCGADGRSEACTLHNCREQ
GSDISCEPGSTHRDRCNTCRCSADGRSRACTLRACPNQ
GSEDSCEPGWTQRMRCNTCRCTADGRSAACTLRACPNQ
GSEISCEPGRTFRDRCNTCRCGADGRSAACTLHHCIYW
GSEVSCEPGRTFRSRCNDCVCGADGRHAACTIRACPNQ
GSEISCEPGRTFRDRCNTCRCGADGRSAACTLVFCHED
GSEISCEPWRTFRDRCNTCRCGADGRGAACTLVICGMQ
GSEISCEPGRTFRDRCNMCGCGADGRWARCTRRACPNQ
GSEISCEPGRTFRDRCNTCRCGADGRSAACTLFTCTYF
GSEISCEPGRTWRDRCNTCRCGADGRSAACTLNGCLLQ
GSEISCEPGRTFRDRCNTCRCGADGRSAACTLANCFFA

FIG. 10

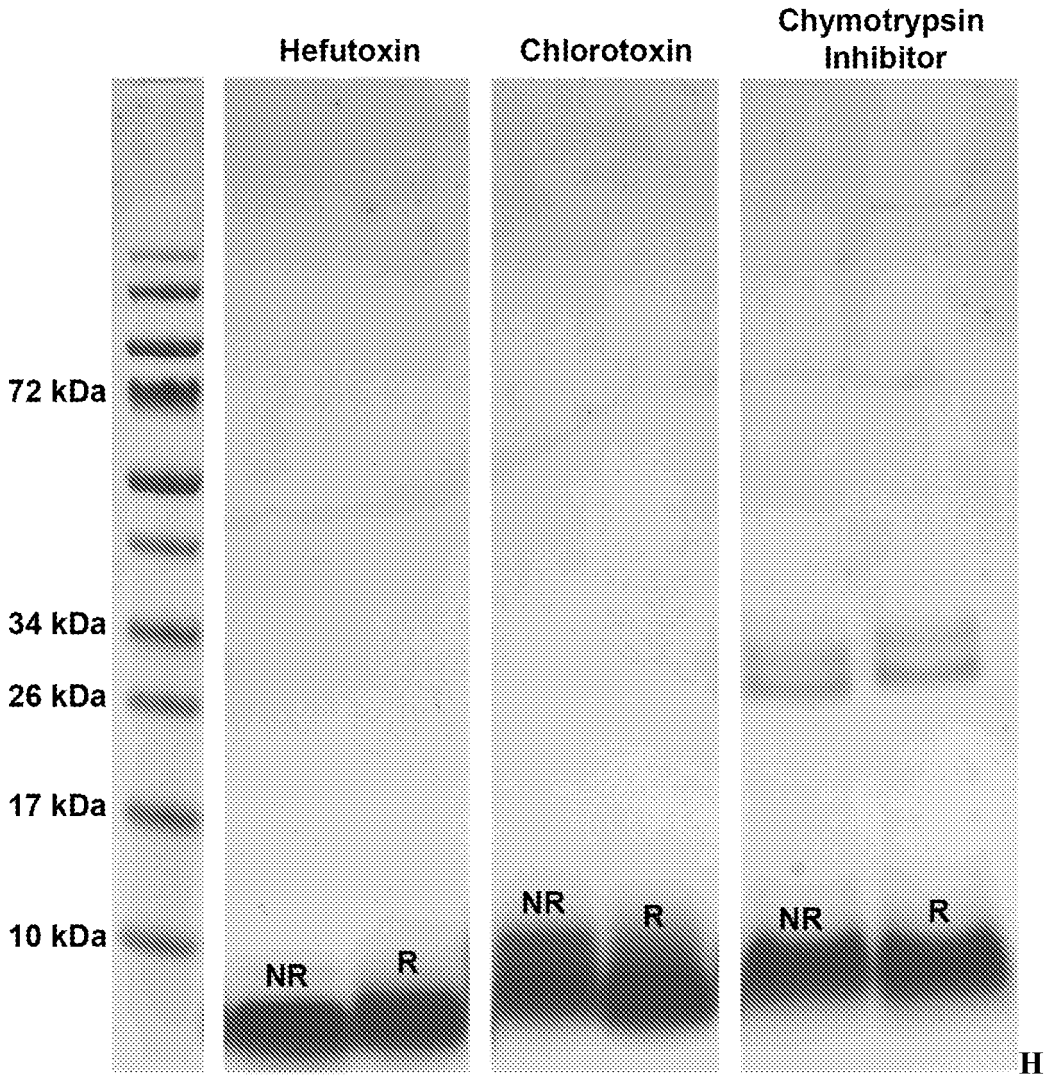

Hefutoxin
Chlorotoxin
Chymotrypsin Inhibitor
72 kDa
34 kDa
26 kDa
17 kDa
10 kDa
NR
R
NR
R
NR
R
H

FIG. 11

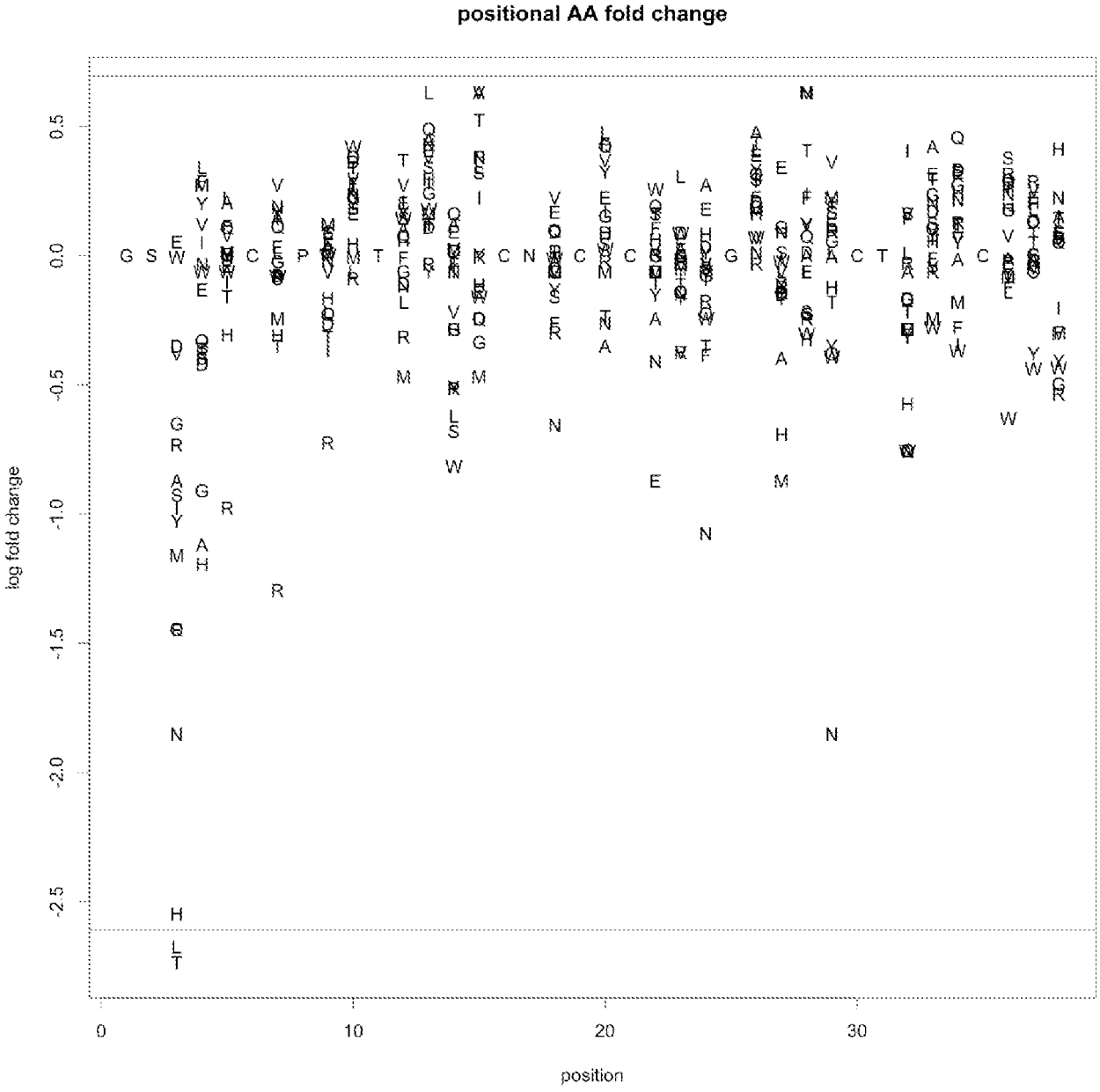

positional AA fold change
log fold change
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
0
10
20
30
position

FIG. 12